

WHAT IS CLAIMED IS:

- 1 1. A method of forming a side-by-side read/write head, comprising:
2 forming a write head and a read head side-by-side, wherein the write head
3 includes a first layer having a first pole tip that defines a width of a written track and the
4 read head includes a magnetic sensor element and shields, yokes for the shields being
5 cantated to allow the read head to be positioned closer to the write head.
- 1 2. The method of claim 1, wherein the forming the write head including the
2 first pole tip further comprises forming the first pole tip first.
- 1 3. The method of claim 2, wherein the forming the write head and the read
2 head side-by-side further comprises forming a first shield layer juxtaposed to the first
3 pole layer, the first pole layer, forming a first insulation layer over the first shield layer,
4 forming a second insulating layer over the first pole layer, forming a second shield layer
5 over the first insulating layer and forming a pedestal layer over the second insulation
6 layer.
- 1 4. The method of claim 3, wherein the forming the first shield layer
2 juxtaposed to the first pole layer further comprises forming a first isolation layer
3 separating the first shield layer and the first pole layer.
- 1 5. The method of claim 3, wherein the forming the second shield layer
2 juxtaposed to the pedestal layer further comprises forming a second isolation layer
3 separating the second shield layer and the pedestal layer.

1 6. The method of claim 3, wherein the forming the first shield layer
2 juxtaposed to the first pole layer further comprises simultaneously forming the first shield
3 layer and the first pole layer.

1 7. The method of claim 3, wherein the forming the second shield layer and
2 the pedestal layer further comprises simultaneously forming the second shield layer and
3 the pedestal layer.

1 8. The method of claim 3 further comprising simultaneously forming leads
2 over the first insulating layer and a write coil over the second insulating layer.

1 9. The method of claim 3, wherein the forming the first and second isolation
2 layers further comprises forming the first and second isolation layers providing a fixed
3 distance between the first shield layer and the first pole layer and the second shield layer
4 and the pedestal layer.

1 10. The method of claim 3 further comprising forming the sensor element
2 between the first and second shields.

1 11. The method of claim 3, wherein forming the first pole layer having the
2 first pole tip further comprises forming the first pole layer having a central axis and the
3 first pole tip is offset from the central axis towards the sensor element to provide closer
4 track alignment.

1 12. A side-by-side read/write head, comprising:
2 a write head and a read head formed side-by-side, wherein the write head includes
3 a first layer having a first pole tip that defines a width of a written track and the read head
4 includes a magnetic sensor element and shields, yokes for the shields being canted to
5 allow the read head to be positioned closer to the write head.

1 13. The side-by-side read/write head of claim 12, wherein the write head and
2 the read head comprises a stack of thin films disposed on an undercoat, wherein the first
3 pole tip is disposed at the bottom of the thin film stack.

1 14. The side-by-side read/write head of claim 13, wherein the write head and
2 the read head further comprise:
3 a first shield layer juxtaposed to a first pole layer;
4 a first insulation layer is formed over the first shield layer and a second insulating
5 layer is formed over the first pole layer; and
6 a second shield layer formed over the first insulating layer and a pedestal layer
7 formed over the second insulation layer.

1 15. The side-by-side read/write head of claim 14, wherein the first shield layer
2 juxtaposed to the first pole layer further comprises a first isolation layer separating the
3 first shield layer and the first pole layer.

1 16. The side-by-side read/write head of claim 14, wherein the second shield
2 layer juxtaposed to the pedestal layer further comprises a second isolation layer
3 separating the second shield layer and the pedestal layer.

1 17. The side-by-side read/write head of claim 14 further comprising leads
2 formed over the first insulating layer and a write coil formed over the second insulating
3 layer simultaneously.

1 18. The side-by-side read/write head of claim 14, wherein the first isolation
2 layer has a fixed distance between the first shield layer and the first pole layer and the
3 second isolation layer has a fixed distance between second shield layer and the pedestal
4 layer.

1 19. The side-by-side read/write head of claim 14 further comprising a sensor
2 element between the first and the second shield.

1 20. The side-by-side read/write head of claim 14, wherein the first pole layer
2 has a central axis and the first pole tip is offset from the central axis towards the sensor
3 element to provide closer track alignment.

1 21. A magnetic storage system, comprising:
2 a moveable magnetic storage medium;
3 an actuator; and
4 a side-by-side read/write head coupled to the actuator, wherein the write head
5 includes a first layer having a first pole tip that defines a width of a written track and the
6 read head includes a magnetic sensor element and shields, yokes for the shields being
7 canted to allow the read head to be positioned closer to the write head.

1 22. The system of claim 21, wherein the write head and the read head
2 comprises a stack of thin films disposed on an undercoat, wherein the first pole tip is
3 disposed at the bottom of the thin film stack.

1 23. The system of claim 22, wherein write head and the read head further
2 comprise a first shield layer juxtaposed to a first pole layer, the first pole layer having a
3 first pole tip for defining a width of a written track, a first insulation layer is formed over
4 the first shield layer and a second insulating layer is formed over the first pole layer and a
5 second shield layer is formed over the first insulating layer and a pedestal layer is formed
6 over the second insulation layer for forming a read head and a write head structure
7 respectively

1 24. The system of claim 22, wherein the first shield layer juxtaposed to the
2 first pole layer further comprises a first isolation layer separating the first shield layer and
3 the first pole layer.

1 25. The system of claim 22, wherein the second shield layer juxtaposed to the
2 pedestal layer further comprises a second isolation layer separating the second shield
3 layer and the pedestal layer.

1 26. The system of claim 22 further comprising leads formed over the first
2 insulating layer and a write coil formed over the second insulating layer simultaneously.

1 27. The system of claim 22, wherein the first isolation layers has a fixed
2 distance between the first shield layer and the first pole layer and the second isolation
3 layers has a fixed distance between second shield layer and the pedestal layer.

1 28. The system of claim 22 further comprising a sensor element between the
2 first and second shield.

1 29. The system of claim 22, wherein the first pole layer has a central axis and
2 the first pole tip is offset from the central axis towards the sensor element to provide
3 closer track alignment.

1 30. A side-by-side read/write head, comprising:
2 write means and read means formed side-by-side, wherein the write means
3 includes a first means having a first pole means for defining a width of a written track
4 and the read means includes sensor means and shield means for shielding the sensor
5 means, wherein the shield means further includes yoke means for concentrating magnetic
6 flux therebetween, the yoke means being canted to allow the read means to be positioned
7 closer to the write means.